

REMARKS

Reconsideration of the present application is respectfully requested.

The manufacture of certain commodities involves a number of demand-supply steps in which a quantity of the commodities is required (demanded) and consequently supplied. For example, a demand-supply step of the supply chain could involve the transfer of commodities from a parts-producing facility to a product-producing facility. Another demand-supply step of the supply chain could involve the production of products received from the parts-producing facility. Still another demand-supply step of the supply chain could involve a transfer of produced products from the product-producing facility to a sales dealer. The demand-supply steps together define a supply chain. Each of the demand-supply steps has certain parameters that could be adjusted in some way which would affect the profitability of the supply chain. For example, the initial distribution of the order amount could be adjusted, so that each of the orders placed in a sales step falls within the order receivable range of the associated production step, in other words, there is a reallocation of the initial order amount (see, page 18, lines 3-7 of the specification). This suggests that n pieces are shifted from one production step to another production step.

Another possible adjustment involves adjusting order placement by pushing an order up or down in time in a manner that minimizes the loss in profit (see page 19, lines 16-19). In that adjustment, n number of pieces of the order amount are shifted from the current order by either delaying production or advancing production.

Yet another adjustment involves the correction of the target values of product stock in a demand-supply. That is, the amount of product stock allocated to a

particular production scheme is adjusted in order to maximize profitability. (See, e.g., page 20, lines 23-27, to page 21, lines 1-9).

Each of the independent claims has been amended to reflect the reallocation of materials in terms of resource distribution, temporal production sequence, or initial stock amount in determining whether profit is maximized. Then, the one adjustment or combination of adjustments that produces the highest profitability index is selected.

That is, each independent claim recites that a basic scheme of at least one demand-supply step is adjusted by at least one of a) changing an initial distribution of an order quantity of the order receipt step, b) advancing or delaying at least a portion of the order amount of the order placement step and c) changing a target stock amount of items allocated to the demand-supply step from the stock amount. A profitability index is calculated for the basic scheme without adjustments being made, and an additional profitability index is calculated for each of the adjustments made to the basic scheme. Then, the scheme having the highest calculated profitability index is selected.

Lilly et al. neither teaches nor suggests reallocation of the quantities of a particular "work order", but only the rescheduling of the work order to satisfy a scheduling due date. Even in the global mode described at col. 9, lines 1-25, *Lilly et al.* appears to indicate that the scheduling system does not modify the work order, but that it may reprioritize work orders as a whole when developing a production schedule on a global basis. In particular, there does not appear to be any adjustment of the parameters set forth as part of a work order, such as the order amount or the scheduling of production or parts or components, and there does not appear to be any discussion of reallocating the initial product stock amount.

Accordingly, it is submitted that the amended claims distinguish patentably over *Lilly et al.*

Furthermore, it is a well-established principle in the law that it is not obvious to combine references if the combination would eviscerate the inventive concept of the base reference. *In Ex. Parte Hartmann*, 186 USPQ 366 (Bd. App. 1974). In

Hartmann, the Court stated:

Reynolds teaches neither partial nor complete orientation of filaments in the film matrix. More importantly however, Reynolds cannot properly be combined with Graham et al. relative to the employment of continuous monofilaments, since to do so would destroy that on which the invention of Graham et al. is based, namely, the use of very short fibers. We will not sustain this rejection. (*Ex parte Hartmann* at 367).

That principle was reiterated ten years later by the Court of Appeals for the Federal Circuit in *In re Gordon*, 221 USPQ 1125 (CAFC 1984) where the Court stated:

The question is . . . whether it would have been obvious from a fair reading of the prior art reference as a whole to turn the prior art apparatus upside down. French teaches a liquid strainer which relies, at least in part, upon the assistance of gravity to separate undesired dirt and water from gasoline and other light oils.

Indeed, if the French apparatus were turned upside down, it would be rendered inoperable for its intended purpose. The gasoline to be filtered would be trapped in pocket 9, and the water French seeks to separate would flow freely out of the outlet 5. Further, unwanted dirt would build up in the space between the wall of shell 1 and screen 21, so that, in time, screen 21 would become clogged unless a drain valve, such as pet-cock 13, were re-introduced at the new "bottom" of the apparatus. See *In re Schulpen*, 390 F.2d 1009, 1013, 157 USPQ 52, 55 (CCPA 1968). In effect, French teaches away from the board's proposed modification. (221 USPQ at 1127)

It is clear that the invention in *Lilly et al.* is based upon providing a computerized system for performing accurate and timely scheduling of work orders (i.e., prioritizing

work orders). In the background section, *Lilly et al.* describes the need for a system for scheduling work orders using a finite, event-oriented scheduling process while taking into account the availability of materials used in the manufacturing process (col. 2, lines 23-27).

As objects of the invention, *Lilly et al.* emphasizes the provision of a computerized system for performing accurate and timely scheduling of work orders in a manufacturing facility, and providing a best fit of resource availability and material availability in achieving that scheduling (column 2, lines 30-33 and 41-45). As explained at column 9, lines 45+, the method is carried out by scheduling a work order in the backward direction. If the backward scheduling results in a schedule in which no operations are scheduled prior to the current date, then the resulting schedule becomes the final schedule of the manufacturing process. If the result of the backward scheduling exceeds the current data, then forward scheduling is performed in order to "achieve an optimum schedule" (col. 10, lines 6-8). Thus, the timelines of the scheduling dictates the final selection of a manufacturing process in *Lilly et al.*

In carrying out the presently claimed invention, all demand supply steps in the supply chain has a parameter of a work order that is adjusted which changes profitability, i.e., different versions of the supply chain result from the adjusted work order, and the selection between them is made based on profitability.

The system of *Lilly et al.* in which scheduling rules, is mutually exclusive of the presently claimed system in which profitability rules. Since changing the *Lilly et al.* system to that which is presently claimed would place scheduling in a subservient position, it would eviscerate the very invention on which *Lilly et al.* is based. Such evisceration is not permissible, as explained earlier.

Furthermore, it is noted that *Sellers et al.* does not teach the presently claimed invention, *Sellers et al.* merely discloses a way of determining a profitability index of a given manufacturing method. There is no disclosure or suggestion therein of creating multiple versions of a supply chain by varying the profitability of each of a plurality of demand-supply steps of the supply chain and then selecting the most profitable version, as presently claimed.

The Office Action also attempts to suggest that *Lilly et al.* discusses profitability. That is, in the Official Action, the following statement is made on page 5:

The Examiner also points out that *Lilly et al.* also teaches the step of changing parameters (resource capacity) of a scheme that affects profitability and goes to the step of determining the best fit for each work order by allocating resources to "maximize" scheme data that "best" suits the company (i.e., profitability) while complying to priority constraints. (Emphasis added)

That is, it is suggested that the use of the term "best fit" is intended by *Lilly et al.* to relate to profitability. Firstly, *Lilly et al.* never discusses profitability. Secondly, as regards the expression "best fit," *Lilly et al.* states as follows at col. 1, lines 41-44.

It is still a further object of the invention to provide a method and means for determining the best fit of the operations of each work order in the schedule based upon both resource availability and material availability. (Emphasis added)

Clearly, by "best fit" *Lilly et al.* means that resource availability and material availability are to be balanced when establishing the manufacturing process. Nowhere do *Lilly et al.* or *Sellers et al.* disclose or teach to vary parameters which vary the profitability of each demand-supply step of a supply chain and then use profitability as the controlling factor in the final selection. In the first sentence of the partial paragraph on page 4 of the Official Action it is stated that the parameters of *Lilly et al.* are "directed more towards scheduling than profitability." It would have

been more correct to say that the parameters of Lilly et al. are directed to scheduling, and that profitability is not discussed.

In light of the foregoing comments, it is submitted that the claims are in conditions for allowance.

Accordingly, for the above reasons, it is submitted that independent claims 1, 8, 17, 28 and 40 distinguish patentably over *Lilly et al.* and *Sellers et al.* and allowance of the application is solicited.

Respectfully submitted,

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